



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,853	09/03/2004	Robert Vacassy	100086CIP	4498

29050 7590 04/11/2006

STEVEN WESEMAN  
ASSOCIATE GENERAL COUNSEL, I.P.  
CABOT MICROELECTRONICS CORPORATION  
870 NORTH COMMONS DRIVE  
AURORA, IL 60504

EXAMINER
----------

MARCHESCHI, MICHAEL A

ART UNIT	PAPER NUMBER
----------	--------------

1755

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/506,853

Applicant(s)

VACASSY, ROBERT

Examiner

Michael A. Marcheschi

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/3/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Art Unit: 1755

The disclosure is objected to because of the following informalities:

The specification does not define the continuing data as is required. Although the transmittal letter might define this, the amendment must be made in accordance with the new rules. **The examiner acknowledges that the transmittal letter defines the instant application as a CIP of parent application, however, it appears that the instant case is directed to the same subject matter and thus should be a straight continuation. Clarification is requested. If this is a straight continuation, a new transmittal should be submitted to clarify the record.**

Appropriate correction is required.

Claims 1-3 and 5-17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-3 and 5-17 are indefinite as to the limitations “methanol” and a “liquid carrier” because methanol is a liquid carrier, thus this reads on methanol, which is not intended. In addition, the specification in section [0015] defines that the liquid carrier can include “a water miscible solvent” (i.e. methanol reads on this), thus it is apparent that methanol can be part of the liquid carrier (component (c)). In view of this, the examiner is unclear as to distinguishing factor between the methanol of component (b) and the use of methanol, as part of the liquid carrier of component (c).

Claim 8 is indefinite because the examiner is unclear as to what wt. % (numerical value) this component is based on. In addition, depending on the numerical value for the wt. %, the

Art Unit: 1755

amount of methanol is outside the scope of claim 5. For example, if the wt. % is 1%, the methanol can be present in an amount of 3000 ppm which is outside the scope of claim 5, which defines a maximum of 1500 ppm.

Claim 9 is indefinite because the examiner is unclear as to what wt. % (numerical value) this component is based on. In addition, depending on the numerical value for the wt. %, the amount of methanol is outside the scope of claim 6. For example, if the wt. % is 1%, the methanol can be present in an amount of 1600 ppm which is outside the scope of claim 6, which defines a maximum of 800 ppm.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 7, 10, 11, 12 and 15-17 are rejected under 35 U.S.C. 102(a) as anticipated by or in the alternative, under 35 U.S.C. 103(a) as being obvious over Hattori et al. (031).

Hattori et al. teach in sections [0024]-[0026] and [0036]-[0042], a polishing composition which comprises a silica abrasive (claimed types and amount (4 parts)) and a medium, wherein the medium can be a mixture of water and methanol. An oxidizing agent and citric acid (complexing agent) can also be used in the composition. The pH of the composition can be about 5. The abstract teaches that the composition polishes a substrate comprising silicon oxide and silicon nitride.

The claimed invention is anticipated by the reference because the reference teaches a composition which comprises all of the claimed components. Although the reference does not literally define that “the interaction between the silica and the methanol provides colloidal stability to the composition”, it is the examiners position that this is inherent in the composition, when methanol is used. In the alternative, it is the examiners position that this limitation is obvious in the reference because it is the examiners position that the addition of the methanol will interact with the silica abrasive, thus providing colloidal stability in the absence of any evidence showing the contrary. This colloidal stability limitation is expected and therefore obvious because the same components are used and therefore the same effect is apparent and obvious. Finally, the reference clearly implies in section [0025] that the composition is stable.

Although the reference might not stabilize the polishing composition with methanol, the method of adding methanol to a silica slurry (i.e. the silica will inherently be contacted with the methanol) is known, thus no distinction is seen to exist.

Claim 3 is rejected under 35 U.S.C. 103(a) as being obvious over Hattori et al. (031).

The reference teaches a pH of about 5 and this reads on the claimed pH because "about" **permits some tolerance**, *In re Ayers*, 154 F 2d 182, 69 USPQ 109.

Claims 5, 6 and 8-9 are rejected under 35 U.S.C. 103(a) as being obvious over Hattori et al. (031) in view of Kato et al. (159).

Kato teaches in column 6, lines 6-20 that mediums for polishing composition generally include a mixture of water and a polar solvent (methanol), wherein the amount of polar solvent (methanol) constitutes up to 1% of the medium.

The primary reference teaches that as the medium used, a mixture of water and methanol can be used. The amount of methanol (up to 1%) used is obvious to the skilled artisan motivated by the fact that the secondary reference teaches that this is a general concentration for methanol when used as a water/methanol medium for polishing compositions.

Claims 1, 2, 4, 7, 10, 12, 13, 14, 16 and 17 are rejected under 35 U.S.C. 102(a) as anticipated by or in the alternative, under 35 U.S.C. 103(a) as being obvious over Chamberlin et al. (506).

Chamberlin et al. teach in sections [0013]-[0021] and claim 37, a polishing composition which comprises a silica abrasive (claimed types and amount (5%)) and a medium, wherein the medium can be a mixture of water and methanol. An oxidizing agent can also be used in the composition. The pH of the composition can be about 5. Claim 37 defines that the composition polishes a substrate comprising silicon oxide and either copper or tungsten.

Art Unit: 1755

The claimed invention is anticipated by the reference because the reference teaches a composition which comprises all of the claimed components. Although the reference does not literally define that "the interaction between the silica and the methanol provides colloidal stability to the composition", it is the examiners position that this is inherent in the composition, when methanol is used. In the alternative, it is the examiners position that this limitation is obvious in the reference because it is the examiners position that the addition of the methanol will interact with the silica abrasive, thus providing colloidal stability in the absence of any evidence showing the contrary. This colloidal stability limitation is expected and therefore obvious because the same components are used and therefore the same effect is apparent and obvious. Although the reference might not stabilize the polishing composition with methanol, the method of adding methanol to a silica slurry (i.e. the silica will inherently be contacted with the methanol) is known, thus no distinction is seen to exist.

Claim 3 is rejected under 35 U.S.C. 103(a) as being obvious over Chamberlin et al. (506).

The reference teaches a pH of about 5 and this reads on the claimed pH because "about" **permits some tolerance**, *In re Ayers*, 154 F 2d 182, 69 USPQ 109.

Claims 5, 6 and 8-9 are rejected under 35 U.S.C. 103(a) as being obvious over Chamberlin et al. (506) in view of Kato et al. (159).

The primary reference teaches that as the medium used, a mixture of water and methanol can be used. The amount of methanol (up to 1%) used is obvious to the skilled artisan motivated

Art Unit: 1755

by the fact that the secondary reference teaches that this is a general concentration for methanol when used as a water/methanol medium for polishing compositions.

Claims 1, 3, 4, 7, 10, 11, 12 and 16-17 are rejected under 35 U.S.C. 102(b) as anticipated by or in the alternative, under 35 U.S.C. 103(a) as being obvious over Huynh et al. (237).

Huynh et al. teach in column 2, line 60, column 3, lines 38-column 4, line 1, column 5, lines 1-35 and the claims, a polishing composition which comprises a silica abrasive (claimed amount (1-5%)) and a medium, wherein the medium can be a mixture of water and methanol. An oxidizing agent and citric acid (complexing agent) can also be used in the composition. The pH of the composition is between 1-6, preferably 2. The composition polishes a substrate comprising silicon dioxide.

The claimed invention is anticipated by the reference because the reference teaches a composition which comprises all of the claimed components. Although the reference does not literally define that “the interaction between the silica and the methanol provides colloidal stability to the composition”, it is the examiners position that this is inherent in the composition, when methanol is used. In the alternative, it is the examiners position that this limitation is obvious in the reference because it is the examiners position that the addition of the methanol will interact with the silica abrasive, thus providing colloidal stability in the absence of any evidence showing the contrary. This colloidal stability limitation is expected and therefore obvious because the same components are used and therefore the same effect is apparent and obvious. Although the reference might not stabilize the polishing composition with methanol,



Art Unit: 1755

the method of adding methanol to a silica slurry (i.e. the silica will inherently be contacted with the methanol) is known, thus no distinction is seen to exist.

Claim 2 is rejected under 35 U.S.C. 103(a) as being obvious over Huynh et al. (237) alone or in view of Chamberlin et al. (506).

Huynh et al. teaches that the abrasive is silica and it is the examiners position that one skilled in the art would have found the broad recitation of silica to include colloidal or fumed silica, thus making these limitations obvious. In the alternative, said types of silica are obvious because the secondary reference clearly shows that these types of silica are known to be used in polishing compositions.

Claims 5, 6 and 8-9 are rejected under 35 U.S.C. 103(a) as being obvious over Huynh et al. (237) in view of Kato et al. (159).

The primary reference teaches that as the medium used, a mixture of water and methanol can be used. The amount of methanol (up to 1%) used is obvious to the skilled artisan motivated by the fact that the secondary reference teaches that this is a general concentration for methanol when used as a water/methanol medium for polishing compositions.

Claims 1-12 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (159) in view of Huynh et al., (237).

Kato et al. teach in column 3, line 3, and column 4, line 20-column 6, line 25, a polishing composition which comprises a silica abrasive (claimed type and overlapping amount), methanol

Art Unit: 1755

(at most 1%t) and water. The composition is used to polish semiconductors (i.e. silicon wafer with an oxide layer thereon which implies silicon oxide containing substrate-see column 10, line 30). It is stated that the pH is not limited.

Kato et al. teach a composition which comprises all of the claimed components (claim 1) and it is the examiners position that the addition of the methanol will interact with the silica abrasive thus providing colloidal stability in the absence of any evidence showing the contrary. This colloidal stability limitation is expected and therefore obvious because the same components are used and therefore the same effect is apparent and obvious. Finally, the reference clearly states that the composition is stable.

With respect to the pH, this reference states that the pH is not limited, thus it suggests a broad pH range. The pH is dependent on the substrate to be polished and it is clear that the primary reference polishes semiconductors. The claimed pH would have therefore been obvious to the skilled artisan motivated by the fact that the secondary reference teaches that the claimed pH is known for polishing compositions used to polish similar substrates. The examiner acknowledges the teachings in column 6, lines 23-26 and lines 62-63 of the primary reference, however, these teaching are not seen a definite teaching away of an acidic pH.

With respect to the amount of methanol used, the reference clearly defines this and it is the examiners position that this amount encompasses and therefore makes obvious the claimed amounts. With respect to the use of an oxidizer and a complexing agent, it is the examiners position that the addition of these components would have been obvious to the skilled artisan in order to adjust the properties of the final polishing composition which is dependent on the use

Art Unit: 1755

thereof. In other words, the use of any conventional polishing additives, as shown by the secondary reference, are well within the level of ordinary skill in the art and therefore obvious.

**In all of the above rejections, the limitations “methanol” and a “liquid carrier” reads on methanol alone because this is a liquid carrier.**

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4, 7, 11, 12 and 15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5, 10-12, 14, 19-23, 26, 29-30 of copending Application No. 10/142,681. Although the conflicting claims are not identical, they are not patentably distinct from each other because the reduction to practice of the copending claims would render obvious the instant claims. The copending claims define a

Art Unit: 1755

composition and method, wherein the composition comprises all of the claimed components.

Although the composition might not literally define the amount of silica abrasive or the methanol/water (as the liquid carrier) combination, the claims, as taken as a whole, define these limitations and any combination of the claimed subject matter is clearly within the scope of the skilled artisan. Although the copending claims does not literally define that "the interaction between the silica and the methanol provides colloidal stability to the composition", it is the examiners position that that the addition of the methanol will interact with the silica abrasive, thus providing colloidal stability in the absence of any evidence showing the contrary. This colloidal stability limitation is expected and therefore obvious because the same components are used and therefore the same effect is apparent and obvious.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-4, and 7-17 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4, 7, 8, and 10-15 of U.S. Patent No. 6,682,575.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the reduction to practice of the patented claims would render obvious the instant claims.

The patented claims define a composition and method, wherein the composition comprises all of the claimed components.

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v.*

Art Unit: 1755

*Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims, 5 and 6 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 5 and 6 of prior U.S. Patent No. 6,682,575. This is a double patenting rejection.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MM  
3/06

Michael A. Marcheschi  
Primary Examiner  
Art Unit 1755